

# REPORT ON MACHINERY.

No. 52707

THUR. APL 18 1907

Port of Newcastle

Received at London Office

Survey held at Newcastle

Date, first Survey Nov 7

Last Survey Apr 13

1907

on the

S/S "Katuna"

(Number of Visits 3)

Tons Gross 4641 Net 2907

Built at Newcastle By whom built Armstrong Whitworth & Co. Ltd

When built 1907

made at Newcastle

By whom made Wallsend Slipway Co. Ltd

when made 1907

made at Newcastle

By whom made Wallsend Slipway Co. Ltd

when made 1907

indicated Horse Power 478

Owners Bucknall Bros Ltd

Port belonging to London

Horse Power as per Section 28 468

Is Refrigerating Machinery fitted for cargo purposes no

Is Electric Light fitted yes

VES, &c.—Description of Engines Fuel oil

No. of Cylinders 3 No. of Cranks 3

Cylinders 24 45 45 Length of Stroke 48 Revs. per minute 64

Dia. of Screw shaft as per rule 15 7/8 Material of screw shaft S

screw shaft fitted with a continuous liner the whole length of the stern tube yes

Is the after end of the liner made water tight

propeller boss yes If the liner is in more than one length are the joints burned

If the liner does not fit tightly at the part

the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive yes

If two

are fitted, is the shaft lapped or protected between the liners

Length of stern bush 5'5"

Tunnel shaft as per rule 13 3/4 Dia. of Crank shaft journals as per rule 13 5/8

Dia. of Crank pin 14 1/2 Size of Crank webs 29 1/2 x 9 3/4 Dia. of thrust shaft under

14 1/2 Dia. of screw 18 ft. Pitch of Screw 18 ft.

No. of Blades 4 State whether moveable yes Total surface 110 sq. ft.

Feed pumps 2 Weir's Diameter of ditto 7 x 9 1/2 Stroke 21 Can one be overhauled while the other is at work yes

Bilge pumps 2 Diameter of ditto 4 3/4 Stroke 24 Can one be overhauled while the other is at work yes

Donkey Engines 3 Sizes of Pumps 8 x 9 8 7 1/2 x 4 1/2 7 6 x 6 x 6 No. and size of Suctions connected to both Bilge and Donkey pumps

Engine Room 4 of 3 1/2 In Holds, &c. No. 1. 2. 3. - 2 of 3 1/2

Bilge Injections 1 sizes 8 Connected to condenser, or to circulating pump

Is a separate Donkey Suction fitted in Engine room & size yes 3 1/2

all the bilge suction pipes fitted with roses yes Are the roses in Engine room always accessible yes

Are the sluices on Engine room bulkheads always accessible

all connections with the sea direct on the skin of the ship yes

Are they Valves or Cocks work

they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates yes

Are the Discharge Pipes above or below the deep water line above

they each fitted with a Discharge Valve always accessible on the plating of the vessel yes

Are the Blow Off Cocks fitted with a spigot and brass covering plate yes

all pipes are carried through the bunkers none

How are they protected

all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times yes

the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges yes

times of examination of completion of fitting of Sea Connections 30/1/07 of Stern Tube 30/1/07 Screw shaft and Propeller 30/1/07

the Screw Shaft Tunnel watertight yes Is it fitted with a watertight door yes worked from top platform

MANUFACTURERS, &c.—(Letter for record S) Manufacturers of Steel J. Spence and Sons Ltd

Total Heating Surface of Boilers 6504 Is Forced Draft fitted yes No. and Description of Boilers 3 S. ended

Working Pressure 180 Tested by hydraulic pressure to 360 Date of test 11-1-07 No. of Certificate 7407

in each boiler be worked separately yes Area of fire grate in each boiler 58.5 sq. ft. No. and Description of Safety Valves to

each boiler 2 Spring Area of each valve 11.04 Pressure to which they are adjusted 185 lb Are they fitted with easing gear yes

smallest distance between boilers or uptakes and bunkers or woodwork 2 feet. Mean dia. of boilers 14 3/8 Length 11'6" Material of shell plates S

thickness 1 5/16 Range of tensile strength 28-32 Are the shell plates welded or flanged ends Descrip. of riveting: cir. seams 2.7 lbs

long. seams 2 butt straps Diameter of rivet holes in long. seams 1 3/8 Pitch of rivets 9 1/16 Esp. of plates or width of butt straps 20 8

per centages of strength of longitudinal joint rivets 89.6 Working pressure of shell by rules 206 Size of manhole in shell 16" x 12"

size of compensating ring McNeil's No. and Description of Furnaces in each boiler 3 Monsons Material S. Outside diameter 3'9 1/2"

Length of plain part top 9 bottom 16 Thickness of plates crown 9 bottom 16 Description of longitudinal joint weld No. of strengthening rings

Working pressure of furnace by the rules 192 lb Combustion chamber plates: Material S. Thickness: Sides 5/8 Back 5/8 Top 5/8 Bottom 15/16

Pitch of stays to ditto: Sides 8 x 4 1/2 Back 8 x 4 3/8 Top 7 1/2 x 4 1/2 If stays are fitted with nuts or riveted heads nuts Working pressure by rules 220 lb

Material of stays S Area Diameter at smallest part 1.45 Area supported by each stay 59" Working pressure by rules 193 End plates in steam space:

Material S Thickness 1 1/16 Pitch of stays 15 2 x 14 How are stays secured d nuts Working pressure by rules 230 Material of stays S

area Diameter at smallest part 5.27 Area supported by each stay 210 Working pressure by rules 250 Material of Front plates at bottom S

Thickness 1 1/16 Material of Lower back plate S Thickness 1 5/16 Greatest pitch of stays 13 3/16 Working pressure of plate by rules 217

Diameter of tubes 2 1/2 Pitch of tubes 3 1/2 x 3 5/8 Material of tube plates S Thickness: Front 1 1/2 Back 3/4 Mean pitch of stays 4 1/2

Pitch across wide water spaces 13 Working pressures by rules 212 lb Girders to Chamber tops: Material S. Depth and

thickness of girder at centre 8 1/2 x 1 1/2 Length as per rule 30 1/2 Distance apart 7 1/2 Number and pitch of stays in each 3 of 4 1/2

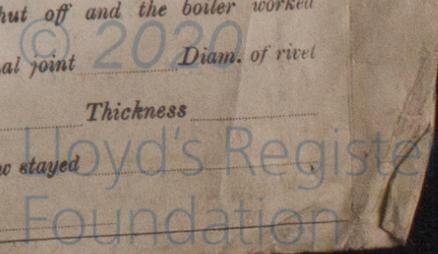
Working pressure by rules 188 lb Superheater or Steam chest; how connected to boiler Can the superheater be shut off and the boiler worked

separately Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet

holes Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness

If stiffened with rings Distance between rings Working pressure by rules End plates: Thickness How stayed

Working pressure of end plates Area of safety valves to superheater Are they fitted with easing gear



**VERTICAL DONKEY BOILER—** Manufacturers of Steel

No. \_\_\_\_\_ Description \_\_\_\_\_

Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fixed \_\_\_\_\_

Working pressure tested by hydraulic pressure to \_\_\_\_\_ Date of test \_\_\_\_\_ No. of Certificate \_\_\_\_\_ Fire grate area \_\_\_\_\_ Description of Safety \_\_\_\_\_

Valves \_\_\_\_\_ No. of Safety Valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ Date of adjustment \_\_\_\_\_

If fitted with easing gear \_\_\_\_\_ If steam from main boilers can enter the donkey boiler \_\_\_\_\_ Dia. of donkey boiler \_\_\_\_\_ Length \_\_\_\_\_

Material of shell plates \_\_\_\_\_ Thickness \_\_\_\_\_ Range of Tensile strength \_\_\_\_\_ Descrip. of riveting long. seams \_\_\_\_\_

Dia. of rivet holes \_\_\_\_\_ Whether punched or drilled \_\_\_\_\_ Pitch of rivets \_\_\_\_\_ Lap of plating \_\_\_\_\_ Per centage of strength of joint \_\_\_\_\_ Rivets \_\_\_\_\_ Plates \_\_\_\_\_

Working pressure of shell by rules \_\_\_\_\_ Thickness of shell crown plates \_\_\_\_\_ Radius of do. \_\_\_\_\_ No. of stays to do. \_\_\_\_\_ Dia. of stays \_\_\_\_\_

Diameter of furnace Top \_\_\_\_\_ Bottom \_\_\_\_\_ Length of furnace \_\_\_\_\_ Thickness of furnace plates \_\_\_\_\_ Description of joint \_\_\_\_\_

Working pressure of furnace by rules \_\_\_\_\_ Thickness of furnace crown plates \_\_\_\_\_ Stayed by \_\_\_\_\_

Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_ Dates of survey \_\_\_\_\_

**SPARE GEAR.** State the articles supplied:— 1 set connecting rod bolts & nuts. 2 Main bearing bolts & nuts. 1 set of coupling bolts & nuts. Set of valves for Weir's pumps. 1 set of bilge pump valves. propeller & shaft. nuts bolts and assorted iron.

The foregoing is a correct description,

FOR THE WALES RAILWAY & ENGINEERING CO. LIMITED.  
Manufacturer.

Dates of Survey while building

During progress of work in shops - -	1906 Nov 7, 16, 28, 29	Dec 3, 11, 12, 31	1907 Jan 7, 8, 9, 11, 14, 15, 16, 23, 30, 31	Feb 6, 8, 9, 13, 22, 27	Mch 1, 4, 5, 6, 15, 19				
	During erection on board vessel - - 20, 22, 25, Apr 4, 13								
	Total No. of visits 38								

Is the approved plan of main boiler forwarded herewith Yls

Dates of Examination of principal parts—

Cylinders	28.11.06 ✓	Slides	12.12.06	Covers	12.12.06	Pistons	14.12.06	Rods	13.12.06
Connecting rods	6/2/07	Crank shaft	16/04	Thrust shaft	8/1/07	Tunnel shafts	8/1/07	Screw shaft	11-12-06
Stern tube	16/1/07	Steam pipes tested	14 Nov 06	Engine and boiler seatings	26/2/07	Engines holding down bolts	1-3-07		
Completion of pumping arrangements	21.3/07	Boilers fixed	26/2/07	Engines tried under steam	22.3/07				

Main boiler safety valves adjusted 22.3/07. Thickness of adjusting washers PB. 5/16 5/16 CB 5/16 5/16 SB 5/16 5/16

Material of Crank shaft S Identification Mark on Do. L.R. J.T.F. 4/07 Material of Thrust shaft L.R. J.T.F. Identification Mark on Do. L.R. J.T.F.

Material of Tunnel shafts S Identification Marks on Do. L.R. J.T.F. Material of Screw shafts S Identification Marks on Do. L.R. J.T.F.

Material of Steam Pipes W.I. Test pressure 540 lbs.

**General Remarks** (State quality of workmanship, opinions as to class, &c.)

Machinery and boilers built under Special Survey. Material and workmanship good and efficient. Engines and boilers examined under steam and safety valves adjusted. In my opinion this vessel is eligible for the record of L.M.C. 4.07.

It is submitted that this vessel is eligible for THE RECORD. **L.M.C. 4.07**

F.D. ELEC. LIGHT

J.S. Lindlay  
18.4.07  
18/4/07

The amount of Entry Fee..	£ 3	When applied for,	17 APR 1907
Special .. .. .	£ 43 8	When received,	2074/0
Donkey Boiler Fee .. .	£ . . .		
Travelling Expenses (if any) £	. . .		

Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.



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Committee's Minute  
Assigned F.M.C. 4.07

MACHINERY CERTIFICATE WRITTEN

Certificate (if required) to be sent to

The Surveyors are requested not to write on or below the space for Committee's Minute.